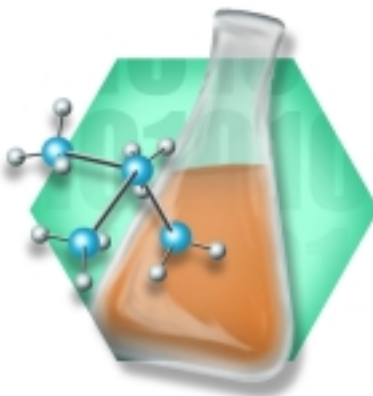


SOFTWARE REQUIREMENTS SPECIFICATION (SRS)
VERSION: FINAL



CHEMICAL INFORMATION MANAGEMENT SYSTEM
(CIMS)
VERSION: ALPHA

PREPARED FOR:
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
ENVIRONMENTAL COMPLIANCE & SAFETY (ECS) STAFF
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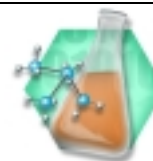
1. INTRODUCTION

Under prime contract GS-23F-9787H, General Service Administration's Management, Organizational, and Business Improvement Services (MOBIS) schedule, Veridian Engineering, an operational group of Veridian Corporation, has been selected to provide information technology (IT) services and software life cycle support.

1.1 IDENTIFICATION

The National Oceanic and Atmospheric Administration (NOAA) of the U.S Department of Commerce, has identified contractual requirements for technical and software engineering support in the tailored design and development of the Chemical Information Management System, or CIMS. NOAA's Environmental Compliance and Safety (ECS) staff, in close coordination with the operational community, has defined a multi-phased program prioritizing operational requirements and delivering increased functionality with each build. As proposed, the CIMS application will provide the ECS and user community with a dynamic software tool to facilitate, and manage chemical inventories in compliance with federal and state regulations. For the remainder of this document, reference to CIMS application software will apply to the following configuration:

Chemical Information Management System
Software Version: Alpha



The CIMS initiative, as defined by the ECS, is focused on providing an automated information management system to support chemical inventory management for all NOAA facilities and resolve current operational shortfalls/requirements. By design, CIMS will provide a well defined and structured process to reduce factors of time, effort, and cost incurred under current operations. In addition, a fully integrated and employed CIMS application will increase measures of compliance with applicable state and federal regulations governing the management, storage, disposal, labeling, and reporting requirements imposed on hazardous chemicals. The centralized CIMS architecture will provide rapid access and dissemination of decision support information across participating facilities and all authorized users, thereby reducing the risk of delays associated with alternate configuration management approaches. The CIMS project will be performed in close coordination with the CIMS user community. Periodic interface will be accomplished through Veridian participation in the CIMS user group.

1.2 SCOPE

This Software Requirements Specification (SRS) defines the minimum definitions of those elements and business rules within NOAA ECS environment necessary to effectively perform the duties of the ECS staff as outlined in the OCD. In addition this document, in conjunction with the OCD, serves as the conceptual design document for creating database tables, elements, code, and other application objects which will ultimately become CIMS. Additionally, this SRS also aids project developers in defining those necessary elements needed to ensure meeting the expectations of the user community, as well as contractual obligations between NOAA and Veridian. The programming team will use these requirements to design, code and test the CIMS application.

2. APPLICABLE DOCUMENTS

The ECEA web-site will provide access to CIMS project-related documentation and/or files. By design, the web-site will contain information on CIMS architecture analysis and a number of requirements documents prepared prior to Veridian's involvement. In addition to the information contained within the ECEA web-site, the following list of applicable documents has been identified for the CIMS project:

- GSA MOBIS Contract, Statement of Work (SOW), Dated 1 March 1999
- NOAA ECS, CIMS Phase I Requirements, Revision 3, Dated 12 March 1999
- Veridian Corporation, Applied Technology Group, Software Engineering Management Plan (SEMP), Dated October 1998
- Veridian Corporation, Applied Technology Group, Draft CIMS Software Development Plan (SDP), Dated 1 May 1999
- Veridian Corporation, Applied Technology Group, Final CIMS Operational Concept Document (OCD), Dated 7 June 1999
- Veridian Corporation Applied Technology Group, Final CIMS Software Requirements Specification (SRS), Dated 6 July 1999

3. SYSTEM ARCHITECTURE

3.1 OVERVIEW

CIMS is primarily a data gathering (collection and entry), reporting, and transmission program. It ties together several dependent systems and processes into a simplified data flow process used by scientists, facility managers, and administrators to document chemical related activity. The software requirements in this specification come from numerous sources. The primary sources of information are the Operational Concept Document (OCD) dated 7 June 1999 and direct input from the CIMS Users Group.

Although conceptually simple, CIMS is a complex application. As required by users, it is powerful, flexible, and easy to use. As required by the underlying systems, it is required to accept and transmit data to a remote database in a seamless, user friendly manner through a Transport Control Protocol and Internet Protocol (TCP/IP) network.

CIMS uses a 3-tiered architecture, consisting of a client application (browser) that accesses data from a data repository through a TCP/IP web server. It is platform independent and can run under Windows, Macintosh, and UNIX operating systems.

3.2 DATA TRANSMISSION

The CIMS application requires access to the data repository that contains the data records. This is accomplished through customized application programs written in one or more computer languages and compiled into an application program.

Communication is accomplished to application programs through transport layer software that allows data access to the data repositories. Client connectivity is achieved through TCP/IP connectivity by the NOAA Headquarters Local Area Network, Internet, or remote dial-in, providing transparent access to the CIMS database. Once a CIMS form has been entered, the data is transmitted to one or more application programs. Details of transaction records, applications, data types, and format can be found in future system/detailed design documents for CIMS.

4. REQUIREMENTS

Currently numerous database applications are used throughout the NOAA community to track and report chemical inventories. These repositories are maintained through individual software applications on different operating systems, as well as handwritten documents and filing procedures. Using CIMS, NOAA ECS maintenance functions are accomplished through a single application program. Maintenance includes data entry, updates, and reporting through a common graphical user interface (GUI). This approach allows fast, efficient, and reliable access for users in different locations. When complete, the CIMS will speed up data entry, eliminate redundant labor required to maintain several databases, enforce data integrity, and reduce costs by allowing the sharing of chemicals between facilities.

Phase I of CIMS is built around five entities: Chemical Inventory, Container Tracking, MSDS Linking, Label Generation, and Structured Reporting. These entities, their attributes, constraints, rules, physical structure, and processes, as well as hardware and software requirements are the focus of this document.

4.1 OPERATIONAL ENVIRONMENT

4.1.1 USERS

Primary system users are NOAA facility administrators from NOAA headquarters, Regional offices, line offices, managers, and other support staff. These users interact with the system from respective company standard PCs. In addition, dial-up (modem) access is also available from personal and remote locations. Phase I access to CIMS is limited to users from ten (10) designated facilities.

4.1.2 HARDWARE

The CIMS application runs on user workstations (clients). The minimum PC hardware requirements include: 80486 or 80586 (Pentium class) microprocessor; 8 Megabytes (Mb) memory; minimum 800x600 resolution Super Video Graphics Adapter (SVGA) monitor (and video driver card); standard keyboard; serial mouse; Etherlink II network card; and physical connectivity to the Internet. Optionally, a modem is required for access to CIMS from locations without Internet connectivity.

4.1.3 SOFTWARE

Installed software necessary for CIMS includes: Windows 3.x, Macintosh, Windows NT, Windows 95/98, or UNIX operating system software, as well as connectivity software for TCP/IP.

The CIMS application requires commercial off-the-shelf (COTS) "browser" software, which includes one of the following:

Netscape Navigator, Version 3.0 or higher
Microsoft Internet Explorer, Version 3.0 or higher

Oracle and Oracle development tools provide an environment to develop and execute complex GUIs operating on various operating systems. Full support is supplied for all standard window objects. This support is extended to the object-oriented paradigm through the use of inheritance when building new objects, resulting in reusable and maintainable code. In conjunction with the Oracle Relational Database Management System (RDBMS), database maintenance, code maintenance, archival processing, and documentation is provided in a central location.

All CIMS functions are visually integrated through the browser software environments. When using CIMS, user browser software is required to accept "cookies."

A cookie is a bit of information about a user or session that may be stored in browser memory or a cookies.txt file by a compatible browser. Whenever the browser requests a page from a host program (in

this case, CIMS), the host program may ask for cookie information. In the case of CIMS, the cookie identifies the user who logged into the CIMS application. By using the cookie information, CIMS can determine what level of access the user has and which applications and rights to provide to them, without forcing the user to supply a name and password each time a page changes.

Most recent browsers come with cookies enabled, but people often disable them for various reasons. If your browser has cookies disabled, consult the browser documentation for instructions on reenabling cookies. Once your browser session has ended, i.e., Netscape or Windows Explorer is closed, the cookie used between CIMS and the browser no longer exists.

4.2 SUPPORT ENVIRONMENT

4.2.1 HARDWARE

Support hardware includes the computers necessary to host the Oracle RDBMS, support files, and Internet server software. Although the minimum required configuration utilizes a two-tiered architecture (RDBMS server and Internet server hosted on the same computer), a three-tiered approach, in which the Internet server software resides on a second computer, is recommended.

For either configuration, the minimum hardware configuration for CIMS includes an RDBMS server configured in the following manner: Pentium II class microprocessor operating at 350 MHz; 256 Mb memory; 800x600 resolution (SVGA) monitor (and video driver card); standard keyboard; serial mouse; network interface card; tape backup; 28.8k modem; and physical connectivity to the internet.

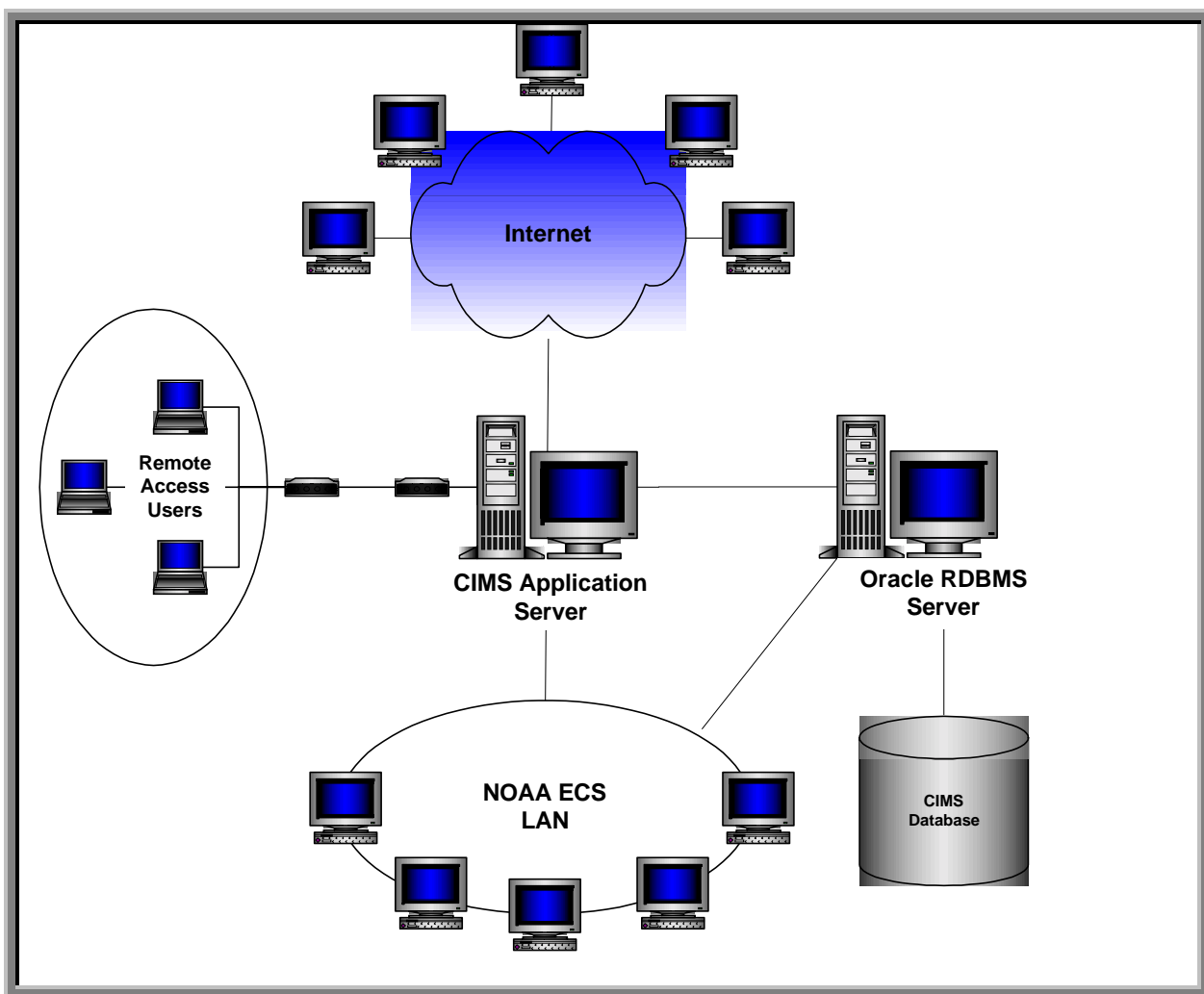


Figure 1. CIMS 3-Tiered Network Architecture

4.2.1.1 Location

At the time of writing, no location for support hardware had been determined. Requirements, costs, and physical connectivity issues concerning this item will be addressed in the future, prior to system deployment. This resolution should address issues of hardware physical location, Internet domain fees, network connectivity, phone charges, and security issues.

4.2.2 SOFTWARE

Software requirements for CIMS support are divided into two groups: COTS and customized. COTS software includes the database engine and Internet server. The required CIMS database engine is Oracle Server 7.3.2 RDBMS and associated software components to include SQL*Plus, SQL*Net, and associated RDBMS tools. Required Internet server software includes Oracle Web Server 3.0.1.1.

4.3 OPERATIONAL SCENARIOS

The initial CIMS model was based on the inputs derived from the OCD, NOAA User's Group Meetings, and NOAA ECS, CIMS Phase I Requirements, Revision 3, Dated 12 March 1999, which describe current processes and actions necessary to track chemical inventories from receipt through disposal.

In CIMS, data is entered via the keyboard and mouse into browser "windows" using standard programming "objects" including data boxes, buttons, menus, message boxes, etc. Once entered, data is transmitted and inserted into appropriate data repositories using the most direct and efficient method.

After transmission, data is validated at the repository for insertion, deletion, or modification, with data errors presented to the user to correct or reject as appropriate. Validation criterion includes user access rights (security considerations), as well as the physical requirements of the database system being utilized. Upon successful validation, the data is then processed into the appropriate data repository.

All CIMS transactions are event driven, i.e., non-sequential in nature. As each transaction is completed, the user is allowed to immediately enter another transaction or "jump" to another function without going through a series of hierarchical functions.

4.4 SOFTWARE REQUIREMENTS

4.4.1 OVERVIEW

CIMS functions are those set events, which correspond to a real-world events, such as moving a chemical or printing a label. Each CIMS function presents one or more screens (windows) of data with specific data entry fields, data lists, and controls appropriate for the current action. Where possible, completion of an action is event driven, i.e., data may be input in any sequence. Where possible, default values will be used to aid in the data entry process. Since many events, actions, and data repository requirements are dependent on prerequisite data, some actions must be completed in a set hierarchical sequence.

4.4.1.1 Information

CIMS updates and retrieves data from several sources. Since the concept of consistent data is more important than speed (though some may argue otherwise), CIMS will draw from authorized "base data" and designated users created by a single database administrator.

In order to guarantee data integrity, CIMS will attempt to reconcile inconsistent data whenever possible (within the confines of NOAA policy and direction). This may be through automatic updates, user dialog messages, error logs, and reports.

4.4.1.2 Processes

CIMS data repository and processes are based on normal NOAA facility processes. These processes include tracking containers throughout the life cycle of a material, from receipt through disposal. Associated processes including the generation of container labels, and providing access to material safety data sheets for chemicals on the premises. Associated with these processes are reporting requirements necessary to provide historical records, proof of compliance with regulations, and to aid in normal day-to-day operations.

4.4.2 SECURITY

To aid in security and provide some degree of accountability, only specified users at specific facilities will have access to CIMS data. In addition, write and edit capabilities will be granted only to a subset of these users as provided by a single administrator.

4.4.2.1 User Access

Access to the CIMS application will be controlled by an identification scheme using username/password combinations. In addition, no accessibility will be given to anyone without a CIMS username, i.e.; CIMS will only be available to users associated with the 10 facilities identified in the CIMS OCD.

4.4.2.2 User Roles

To facilitate data accessibility rules established by NOAA, user profiles (or roles) will be used to determine access rights of individuals using CIMS. These rights refer to the ability to READ, INSERT, UPDATE, and DELETE data. In general, these rights apply to the five CIMS requirements detailed in section 4.4.3 below. In addition, they also apply to user rights themselves, i.e., and the ability to change user data, such as username and password.

READ is the ability to navigate through CIMS screens and view data pertinent to the screen being accessed. Inherent within the READ action is also the capability to PRINT, due to the graphical and functional nature of browser software. INSERT is the function to add new records, while UPDATE means changing value of existing records.

Role	Chemical Library	Inventory Tracking	MSDS	Reports	Labels	User Data
Generic User	READ	READ, INSERT, UPDATE	READ	READ	READ	READ, UPDATE*
CIMS Manager/DBA	READ, INSERT, UPDATE, DELETE	READ, INSERT, UPDATE, DELETE	READ, INSERT, UPDATE, DELETE	READ	READ	READ, UPDATE*
Line Office	READ	READ	READ	READ	READ	READ, UPDATE*
RECO	READ	READ	READ	READ	READ	READ, UPDATE*
NOAA HQ	READ	READ	READ	READ	READ	READ, UPDATE*
System Administrator	READ, INSERT, UPDATE, DELETE	READ, INSERT, UPDATE, DELETE	READ	READ	READ	READ, INSERT, UPDATE, DELETE

* This data may only be updated for the user's own profile.

When the user first enters the CIMS application they will be prompted for a username and password, this information will be used to determine the role levels allowed. If the user has a role level of Facility Manager or higher they will be prompted to select the facilities they want to review. For example a user with a National Weather Service (NWS) Line Office role can choose to view all NWS facilities or only one facility within the NWS. This selection will determine the amount of information displayed in the CIMS application. If the entire NWS was selected all NWS facility inventory will be displayed in the Container Inventory function. The facility access list is not limited to Line Offices or Regions, customized access lists can be created for users who need to access groups of labs or facilities.

4.4.3 DETAILED FUNCTIONAL REQUIREMENTS

To aid in the decomposition of the information and processes requirements the CIMS application has been divided into five major functional requirements:

1. Inventory Tracking
2. Chemical Library
3. MSDS Access
4. Label generation
5. Structured reports

The remainder of this section details these requirements.

4.4.3.1 Inventory Tracking

4.4.3.1.1 Container Information

The Container Inventory Tracking application will allow authorized users the functional capability to access, record, and modify information relating to the receipt, storage, transfer, and handling of containers. The fields designated with an asterisk (*) are mandatory information. At a minimum, the Container Inventory Tracking Application will maintain the following information/data:

- Unique Container ID*
- Facility Name*
- Facility Address
- Facility Type
- Facility EPA ID # (If Applicable)
- Facility Line Office – Level 1*
- Facility Office/Laboratory/Field Unit Name – Level 2 (If applicable)
- Facility Inventory Point of Contact – Name
- Facility Inventory Point of Contact – Phone number
- Storage Area – Level 3, 4*
- Storage Sub-Area – Level 5+*
- Date Received*
- Inventory Type (Pure Chemical, Waste, Mixture, etc.)*
- Container Type: box, drum, bottle, etc.*
- Container Units: gallons, lbs., each, etc.*
- Container Size: quantity of units*
- Volume: Original Amount & Amount Remaining – also used for quantity tracking
- Responsible facility party*
- Person Entering Inventory Data – automatically entered by CIMS based on user log-in
- Notes

4.4.3.1.1.1 Chemicals

The following information is unique to chemical containers including gas cylinders:

- Container Contents (Relates to chemical name in Chemical Library. May be a synonym.)*
- Vendor
- Product Number
- Current Volume/Quantity
- Date Opened
- Use Code*
- Expiration Date

4.4.3.1.1.2 Waste

The following information is unique to Waste Containers, this includes hazardous and non-hazardous waste containers:

- Waste Contents (Relates to name in Library. May be a synonym.)*
- Accumulation Date
- Designate if Hazardous or Non-Hazardous Waste
- Generator Name and Address

- Manifest Number
- Disposal Date
- Disposal Method
- Shipping Destination
- Record Date

4.4.3.1.1.3 Multiple container group

Containers may be received in-groups greater than one. The CIMS user can choose to identify the container at a group level instead of individual containers. An example is a box of containers or a group of gas cylinders. The user may split the group at any point and uniquely identify containers removed from the group. Information unique to container groups is quantity.

- Quantity Units: quantity of unit size

4.4.3.1.1.4 Gas Cylinders

The following information is unique to gas cylinder containers: gas cylinders may contain a chemical and are considered part of the above chemical container. If the gas cylinder contains samples or inert (non-chemicals) material then the user must enter a text description of this material. Links to the Chemical Library or MSDS information is optional.

4.4.3.1.1.5 Other Containers

Additional Container types may be added to include biological samples, consumer products, and any future material types. NOAA must identify any unique data requirements before the Preliminary Design Review.

4.4.3.1.2 Container Transactions

In addition to the stored CIMS information there will be a set of inventory processes defined as follows:

4.4.3.1.2.1 View Inventory

This function enables the user to select a facility or facility groups and see a summary of the container inventory at those facilities. The container can be converted from chemical to waste during this transaction.

4.4.3.1.2.2 Add Inventory

This function allows the user to add a new chemicals and non-chemical containers to the inventory. Most additions to the inventory will be this type. The user will first have to enter the required chemical information, if the chemical or recipe is not in the Library the user will be sent to this function to add it. After identifying the chemical contents the user will have to enter required container and chemical/recipe information. When this information is submitted a unique container ID will be assigned. This container may be received as an order shipment, transferred from another facility, or the splitting of an existing container or multiple containers group.

4.4.3.1.2.3 Manage Inventory

This optional function provides more detailed tracking of Inventory Information. This information includes movement of inventory within a facility, movement of inventory to other facilities, reduction of inventory amount (use), container disposal, and the reconciliation of container amounts.

4.4.3.1.2.3.1 Move Container

This function provides tracking the movement of containers within a facility, to another responsible party, to the field or temporarily to a ship. The area, sub-area, and responsible person information can be modified by this process.

4.4.3.1.2.3.2 Transfer Container

This function facilitates the tracking for the permanent transfer of containers from one facility to another. This transaction also records information on the movement of inventory to the ship, field, or in transit between locations. The following information can be modified: facility name and responsible person

4.4.3.1.2.3.3 Use Inventory

This function allows the user to reduce the amount of the container. The units of measure cannot be modified only the quantity of those units.

4.4.3.1.2.3.4 Container Disposal

There are several types of container disposal including:

1. Used. The contents are completely used up and the container is empty
2. TSDF. Transport to Disposal Facility (for Hazardous waste). The user will then have to fill in applicable waste information for the container.
3. Return to Vendor – Off spec, damaged chemicals or empty re-usable gas cylinders are returned to the vendor.
4. Treat – The contents are neutralized or treated in a manner that allows drain or trash disposal
5. Recycle – The contents are recycled/reused at the facility or transferred off-site for recycle/reuse.

4.4.3.1.2.3.5 Container Reconciliation

Used to determine which chemicals are not recorded properly in the CIMS container Inventory. Human inspection will be required to fully implement this function. This will only help to facilitate the determination of CIMS information shortfalls.

4.4.3.2 Chemical Library

Chemical Library, in conjunction with Container Tracking, will comprise a majority of the Phase I development effort.

4.4.3.2.1 Library Information

The Master Chemical Library application will allow users to review, record, access, and modify reference information relating to chemicals and non-chemicals based on user access permission. Library Information is not dependent on that chemical being in the inventory. At a minimum, the library will maintain the following information/data:

- Chemical Name* (also used for identification of non-chemicals)
- Synonym or Alias
- Manufacturer
- Form (Pure, Mixture, Recipe, Kit)
- Physical State (Solid, Liquid, Gas)
- Chemical Abstract Service (CAS) Number
- Specific Gravity or Density of the Chemical
- OSHA Hazard (Flammable, Sudden Release of Pressure, Reactive, etc.)
- NFPA Hazard Class and Level
- Chemical Strength
- Vapor Pressure
- Flash Point
- Chemical Purity
- Date Stamp (date entered into the Library)*

4.4.3.2.1.1 Recipe

The following information is unique to chemical recipes, mixtures and kits.

- Chemical Components*
- % of total for each component
- Recipe creator*
- Unique recipe name*

4.4.3.2.1.2 Waste

The following information address waste that is added to the Library as waste or chemicals converted to waste:

- RCRA Waste Code (If Hazardous)
- State Waste Code (If Applicable)
- Waste Material Handling Method (Burned, Flushed, etc.)
- DOT Identification Number (For Waste Material)
- DOT Shipping Name (For Waste Material)

4.4.3.2.2 Library Transactions

This section specifies required functionality for the Library.

4.4.3.2.2.1 View Library Information

This function enables the user to view detailed chemical or non-chemical information for any item in the Library. This information is independent of the user and facility location. The user will also be able to jump to the MSDS information if a link exists.

4.4.3.2.2.2 Add New Library Information

This function allows input of detailed chemical or non-chemical information for an item not in the system. The user may identify the library item as hazardous and choose the hazardous classification (OSHA, RCRA, NFPA, etc.). The user may also identify the hazard level.

4.4.3.2.2.3 Add Recipe

A user may create a chemical combination or dilution that will be maintained in the Chemical Library. The recipe can be a combination of only those chemicals already in the Chemical Library.

4.4.3.3 Access to MSDS

Phase I requires access to chemical manufacturer/vendor generated Material Safety Data Sheets and is limited to hypertext links to either the manufacturer's MSDS web site, i.e., universal resource locators (URLs) or electronic files maintained on storage media contained within the CIMS hardware architecture. Application software will provide the necessary screens to allow authorized users the functional ability to enter and update one or more links to a particular chemical MSDS. Links may be in the form of manufacturer URLs or NOAA supplied text files. Authorized users will be provided the capability to choose from one or more links from a drop-down menu to access the required MSDS information.

Veridian can not ensure that the user-defined links will be valid at any point in time. System integrity will be strongly influenced by the maintenance of the manufacturer/vendor's site and their data management processes as well as the status of the Internet connection. Follow-on development efforts, Phase II or beyond, will focus more on incorporating direct links to locally stored MSDS files for all inventory chemicals.

4.4.3.3.1 MSDS Information

Phase I will provide minimal MSDS information:

- Chemical Name
- Chemical Manufacturer
- MSDS Web locator link

4.4.3.3.2 MSDS Transactions

The chemical being related to an MSDS must already be in the Chemical Library. Phase I will provide minimal MSDS transactions:

4.4.3.3.2.1 View MSDS Links

The user will select a chemical or container and be provided a link to the manufacturers MSDS. This assumes a previous user has designated the web page link with the Add Web Link transaction

4.4.3.3.2.2 Add MSDS URL Link

The user will first identify the container or chemical for the link. The user will then type in or paste the URL for the online

4.4.3.3.2.3 Add MSDS Local File Link

For those MSDS files not available through the Internet, an on-line user may use this function to link the chemical or container to a file on a local workstation or server.

4.4.3.3.2.4 Update Link

The user can update links based on updated or new MSDS information.

4.4.3.4 Warning Label Generation

Label Generation will allow the user to generate applicable labels for containers that hold hazardous and non-hazardous inventory in the workplace. These labels are created from a user data entry screen and will include:

- General Contents
- Non-Regulated Waste
- Chemical Storage
- Hazardous Waste
- OSHA Hazard Label

Where required label fields correspond to data elements stored within the database, database values will be provided as default label entries. The system is required to allow authorized users the ability to override default data. See Appendix B for a draft of the Warning Label formats.

4.4.3.4.1 Label Information

General Contents labels apply to any container that does not fall into the other label categories. The label data includes:

- Container Contents
- Common Name
- Inventory Type
- Owner
- Container ID

The Non-Regulated Waste label applies to waste containers that do not require RCRA Waste information. The label data includes:

- Container Contents
- Common Name
- Accumulation Date
- EPA ID# (If Available)
- Owner
- Container ID
- Generator Name and Address

The Chemical Storage label applies to chemicals that are not hazardous. The label data includes:

- Container Contents
- Start Date
- Owner
- Container ID

RCRA hazardous waste labels apply to containers that hold hazardous waste. These labels must state the words "Hazardous Waste." RCRA label generation enables the user to select data from the database that will automatically be printed on the label. The label data includes:

- Container Contents
- Hazard
- Accumulation Start Date
- Facility EPA ID #
- Owner
- Container ID Number
- Common Name
- RCRA Waste Code
- Generator Name & Address

OSHA label generation will enable the user to select data from the database that will be automatically printed on the label. The label data includes:

- Chemical Name
- Chemical Synonyms
- Hazard
- Target Organ
- Owner
- Start Date
- Container ID Number
- Chemical Strength.

PCB labels will be ordered from a commercial vendor.

4.4.3.4.2 Label Transactions

4.4.3.4.2.1 Generate Label

The user will pick from a list of labels and then be prompted for the chemical or container information. The Label data default values will be populated for visual inspection on the screen. The user may modify CIMS generated default values.

4.4.3.4.2.2 Print Label

The user will print the created label on a standard CIMS printer.

4.4.3.5 Structured Report Generation

The CIMS software supports the generation of structured reports. Veridian will review chemical inventory reports from the pilot facilities to identify common structures and formats. Furthermore, the Software Requirements Team will work closely with the CIMS User Group to prioritize reporting requirements and identify five (5) mandatory reports. The report generation tool will support both web page report generation as well as create a text file which can be saved, stored, and/or printed. Follow-on efforts, Phase II and beyond, will address ad hoc reporting requirements and automated comparisons between CIMS generated inventories/data and external resources

Previously anticipated required reports included:

1. Amount and type of waste at Facility
2. Container History
3. Amount of a chemical type at a facility
4. Container, Chemical, MSDS relationship
5. Container Summary for an area/sub-area location

There is no information specific to the report function. The report area is a compilation of one or more other data fields defined above.

4.4.3.5.1 Report Transactions

4.4.3.5.1.1 Generate Report

The user selects from a pre-defined list of reports. The report will be displayed on the screen.

4.4.3.5.1.2 Print Report

After generating the report, the user will then be able to print the viewed information using functionality within the client web browser software.

4.4.3.5.1.3 Save Report

Users will be provided the option to save the report to a local workstation or server (as provided by network architecture constraints) as a comma delimited or tabular form text document.

4.5 LOGISTICS REQUIREMENTS

4.5.1 HARDWARE

NOAA is responsible for providing the final support hardware for hosting the CIMS application. NOAA is also responsible for the Internet connection and dial-up capabilities of the final Phase I CIMS application. Veridian Engineering will host prototype and development systems on their own support hardware.

4.5.2 SOFTWARE

Prior to delivery of CIMS, NOAA will purchase or show sufficient proof of licensing for all Oracle products used for the deployment of the CIMS application.

4.6 SYSTEM SUPPORT

4.6.1 SYSTEM INSTALLATION

NOAA is required to provide initial installation, configuration, maintenance, and support of CIMS hardware and software. At their option, NOAA may provide hardware to Veridian for initial installation

and configuration. If NOAA chooses to provide the hardware for installation, NOAA personnel may observe this installation on a not-to-interfere basis at Veridian Engineering spaces. If NOAA chooses to install the CIMS application on its own, CIMS COTS and customized application software will be provided to NOAA on an agreed upon format.

4.6.2 QUALIFICATION PROVISIONS

Demonstration, testing, and analysis of the CIMS will be governed by applicable Veridian Engineering guidelines; applicable software design, test, & implementation documents; and other documents binding the CIMS project.

4.6.3 TRACE-ABILITY

All defined requirements will be traced through procedures managed and defined by the CIMS Configuration Manager.

4.6.4 COMPUTER COMMUNICATIONS

NOAA will ensure that each user workstation has access to the Internet or, if required, that each user workstation has modem access to the web application server.

4.6.5 PERSONNEL-RELATED REQUIREMENTS

Each CIMS user must be familiar with the general use of a computer workstation and be familiar with access to the Internet. The CIMS software is designed to be as user friendly as possible; due to individual preferences, this does not guarantee that every user will be totally satisfied.

4.6.6 ACCOUNTABILITY

This document provides the core requirements necessary for the completion of CIMS. However, due to the nature of software communication, it is of the essence to carry completion of this project to a timely and amicable end. Requirement clarification and refinement are an integral part of this process.

During the development cycle, exchange between Veridian and NOAA is critical, both to further identify and clarify requirements, and to maintain focus on the job at hand. Lack of or untimely response to requirement definitions, as well as incidental or supplemental tasks outside the scope of the CIMS project requirements and schedule will interject delays in project deliverables. To provide accountability between parties, requests for data and information, clarification of requirements, supplemental meetings, and other items pertinent to the development of CIMS shall be documented and validated (signature, initial, or electronic receipt) to ensure accountability.

Upon delivery, Veridian must meet each requirement as defined by this document (and mutually agreed upon in future revisions of this document). In return, authorized NOAA personnel will "sign-off" on each requirement, indicating the minimum definition of the requirement has been met. Only one authorized signature is necessary to signify completion of current (and mutually agreed upon future) requirements contained in this document. Signatures for all defined requirements satisfy Phase I requirements of the CIMS development effort.

APPENDIX A – ACRONYMS

<u>Acronym</u>	<u>Definition</u>
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
CHP	Chemical Hygiene Plan
CIMS	Chemical Information Management System
COTS	Commercial Off-The-Shelf
CSCI	Critical Software Configuration Item
DOT	Department of Transportation
ECS	Environmental Compliance and Safety
EPA	Environmental Protection Agency
GUI	Graphical User Interface
HCS	Hazard Communication Standard
IT	Information Technology
MOBIS	Management, Organizational, and Business Improvement Services
MSDS	Material Safety Data Sheets
NOAA	National Oceanic and Atmospheric Administration
OSHA	Occupational Safety and Health Act
RCRA	Resource Conservation and Recovery Act
RDBMS	Relational Database Management System
RECO	Regional Environmental Compliance Officer
SRS	Software Requirements Specification
SVGA	Super Video Graphics Adapter
TCP/IP	Transport Control Protocol and Internet Protocol
URL	Universal Resource Locator

APPENDIX B – WARNING LABELS

NON-REGULATED WASTE

Contents: “CIMS Provided (Container ID)”
Common Name: “CIMS Provided with Edit”
Accumulation Date: “CIMS Record with Edit”
EPA ID #: “CIMS Provided”
Owner: “CIMS Provided with Edit”
Container ID Number: “CIMS Provided”
Generator Name: “CIMS Provided with Edit”
Generator Address: “CIMS Provided with Edit”

HAZARDOUS WASTE

Contents: “CIMS Provided (Container ID)”
Common Name: “CIMS Provided with Edit”
Hazard: “CIMS Provided”
Accumulation Date: “CIMS Record Date with Edit”
EPA ID #: “CIMS Provided” RCRA Waste Code: “CIMS Provided w/Edit”
Owner: “CIMS Provided with Edit” Start Date: “System Date”
Container ID Number: “CIMS Provided”
Generator Name: “CIMS Provided with Edit”
Generator Address: “CIMS Provided with Edit”

CHEMICAL STORAGE

Contents: “CIMS Provided (Container ID)”
Start Date: “CIMS Record with Edit”
Owner: “CIMS Provided with Edit”
Container ID Number: “CIMS Provided”

OSHA HAZARD

Contents: “CIMS Provided (Container ID)”
Common Name: “CIMS Provided with Edit”
Hazard: “CIMS Provided”
Target Organ: “CIMS Record Date with Edit”
Owner: “CIMS Provided with Edit” Start Date: “System Date”
Container ID Number: “CIMS Provided”

GENERAL CONTENTS

Contents: “CIMS Provided (Container ID)”
Common Name: “CIMS Provided with Edit”
Inventory Type: “CIMS Record with Edit”
Expire Date: “CIMS Provided”
Owner: “CIMS Provided with Edit”
Container ID Number: “CIMS Provided”